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171. *Pecten vellicatus*, *Hutt.* = *Pecten convexus*, *Q. and G.*  
 171. *Vola laticostatus*, *Gray* = *Pecten laticostatus*, *Gray.*  
 172. *Lima zealandica*, *Sow.* = *Lima zealandica*, *Sow.*  
 172. " *angulata*, *Sow.* = *Limna angulata*, *Sow.*  
 172. " *japonica*, *A. Ad.* = *Lima bullata*, *Born.*  
 173. *Plicatula novæ-zealandiæ*, *Sow.*, *not New Zealand.*  
 173. *Anomia stowei*, *Hutt.* = *Anomia stowei*, *Hutt.*  
 173. " *alectus*, *Gray* = *Anomia alectus*, *Gray.*  
 174. " *cytæum*, *Gray* = *Anomia cytæum*, *Gray.*  
 174. *Placunanomia zealandica*, *Gray* = *Placunanomia zealandica*, *Gray.*  
 174. *Placunanomia ione*, *Gray* = *Placunanomia ione*, *Gray.*  
 175. *Ostrea edulis*, *L.* = *Ostrea angasi*, *Sow.*  
 175. " *discoidea*, *Gld.*, *not New Zealand.*  
 175. " *glomerata*, *Gld.* = *Ostrea glomerata*, *Gld.*  
 175. " *reniformis*, *Sow.* = *Ostrea reniformis*, *Sow.*

## BRACHIOPODA.

176. *Waldheimia lenticularis*, *Desh.* = *Magellania lenticularis*, *Desh.*  
 176. *Terebratella cruenta*, *Dillw.* = *Terebratella cruenta*, *Dillw.*  
 177. *Terebratella rubicunda*, *Sol.* = *Terebratella rubicunda*, *Sol.*  
 177. *Magas evansii*, *Davidson* = *young of Terebratella cruenta.*  
 177. *Waltonia valencienni*, *Davidson* = *young of Terebratella rubicunda.*  
 178. *Bouchardia cumingi*, *Davidson*, *not New Zealand.*  
 178. *Kraussia lamarekiana*, *Davidson*, *not New Zealand.*  
 178. *Rhynchonella nigricans*, *Sow.* = *Hemithyris nigricans*, *Sow.*

ART. XXIV.—*Notice of an Electric Ray new to the Fauna of New Zealand, belonging to the Genus Astrape.*

By A. HAMILTON.

[*Read before the Otago Institute, 12th November, 1901.*]

Plates X.—XII.

DURING the cruise of the "Doto" in the southern coastal waters of New Zealand, in the early part of 1900, a specimen was caught in Foveaux Strait, in the seventy-sixth haul, in shallow water, of a cramp-fish or torpedo ray, which appears to be an addition to the list of our New Zealand fishes. I

received the specimen from Mr. Ayson, who was in charge of the experimental trawling, on his return to Dunedin. The fish had been placed with other specimens in a jar of strong alcohol, and presented a very shrivelled appearance, the skin being very loose and full of creases and folds. The shape of the body, excluding the short tail, was nearly circular, being 8 in. in each diameter (Plate X.). The total length of the body, including the tail portion, was  $10\frac{3}{4}$  in.

In November of the same year I obtained a fresh specimen of this curious fish from a fish-shop in Dunedin, which had been caught the previous night by the steam-trawler some distance outside of the Otago Heads. The general shape and appearance of this specimen was so unlike the other that I thought they must be different species, but on examination I find no material points of difference, except in the general outline, as shown in the plate. The outline figures there given are mechanically reduced from outlines made by passing a pencil round the edges of the fish while it rested on a piece of paper. I am therefore compelled to think that the first specimen must have been much altered in shape by the action of the spirit.

The proper shape of this interesting fish appears to be more of a long oval than a circle, the measurements being 7 in. in greatest diameter and  $14\frac{1}{2}$  in. in length.

The very minute, almost invisible, eyes, the single dorsal, and the position of the vent, place it in the genus *Astrape* of Muller and Henle. In the absence of further specimens (both those obtained being males), and not having the necessary literature, I cannot say that it is absolutely the same as *Astrape capensis*. I have therefore, as already intimated in my report of the 5th July, 1900, called the New Zealand specimens *Astrape aysoni*, after their first discoverer.

The British Museum catalogue records *Astrape capensis* from the Cape and from the coast of Madagascar, and an allied species is recorded from Japan, but I cannot get any description for comparison with the New Zealand specimen, nor any illustrations.

### Family NARCOBATIDÆ.

#### Genus ASTRAPE, Mull. and Henle.

#### *Astrape*, Mull. and H.

Tail with a fold on each side. Body entirely naked; upper surface reddish-brown, lower surface white and yellowish-white. One dorsal fin only on the tail, without spine. Caudal well developed. Anterior nasal valves confluent into a broad flap overhanging the mouth. Teeth pointed; dental laminae scarcely extending beyond the other margin

of the jaws. Spiracles immediately behind the eyes, which are very minute, and hardly traceable under the skin. An electric apparatus between the head and pectoral fins.

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EXPLANATION OF PLATES X.—XII.

PLATE X.

*Astrape aysoni*, n. sp.

PLATE XI.

*Astrape aysoni*, head.

PLATE XII.

*Astrape aysoni*, under-surface: fig. *a* from live specimen; fig. *b* from spirit specimen; fig. *c*, tail.

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ART. XXV. — *Embryology of New Zealand Lepidoptera:*  
*Part II.*

By AMBROSE QUAIL, F.E.S.

[*Read before the Philosophical Institute of Canterbury, 11th February, 1902.*]

Plate XIII. (See also pl. ix., vol. xxxiii.)

EMBRYOLOGY in interest supersedes the pleasures of collecting and preserving specimens in the imago stage, and enhances the scientific value of the *Lepidoptera* in entomology. Breeding insects is a means towards an end—good specimens to the collector. On the other hand, the desire of the student is to know what can be learnt of structure, habits, and so forth. I know prominent embryologists in England who, after devoting great attention to breeding and hybridizing species, hand over the resulting imagines to some collector friends.

Probably most collectors would at once kill and set a female specimen of any scarce or rare species, if in perfect condition, but an embryological student would almost certainly try and procure ova. Such a case I well remember. A party of several entomologists were at the New Forest, England, and my friend Mr. Arthur Bacot took a freshly emerged female of a scarce species—*Peridea trepida*, I think—which he decided to keep until night and try to assemble some males. Any other of the party would have killed it at once, on the principle of “a bird in the hand is worth two in the bush.” That evening, before sugar commenced, we hung her ladyship like a songster in a cage, from a branch of